

**WILDFLOWER INVENTORY, SODA BUTTE CAMPGROUND, GALLATIN  
NATIONAL FOREST, MONTANA, 12 AUGUST 1989**

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ABSTRACT

Forbs growing in a study plot in a montane meadow in Montana were surveyed and are listed.

KEY WORDS: Floristics, Rocky Mountains, Montana.

Of the Rocky Mountain flora, Rydberg (1922) estimated 1055 genera and 6029 species. A more conservative contemporary estimate gives 5000 species for the region (Craighead, *et al.* 1963). At Soda Butte Campground, in a 10 meter square study plot, we counted 41 species in 20 genera, excluding grasses, sedges and trees. The campground meadow, though adjacent to burned areas, escaped the fires that in the summer of 1988 raged down the slope just across the road (Rt. 212).

In the understory of the burned conifer wood, the massed colors of dominant *Epilobium angustifolium* and *Helianthella uniflora* were stunning. But across the road in the meadow, there was a greater diversity of flowering plants without the dominance of one or a few species. There were no trees in the plot itself; these were to be found around the perimeter as described below. If grasses and early blooming annuals had been counted and allowance made for specimens missed or overlooked in our examination of the meadow, the diversity of herbaceous plants in this space might easily reach 60 species.

Location and Layout of the Study Area

The study site was selected because it showed a rich diversity of wildflowers. The meadow itself, extending between Rt. 212 and the campground service road, is the only open space within Soda Butte Campground. The campground, maintained by the National Forest Service, is within the Gallatin National Forest, 1.5 mi NE of Cooke City, Park County, Montana, and is 7816 ft above sea level. There were three edges where shade would be provided to an otherwise entirely open sunny space. These were: (1) to the west, on the border of Rt. 212, within the shade of charred conifers; (2) to the east, along the park road, shaded by mature conifers, mostly spruce; and (3) most

attractive of all, to the north, an edge of trees and bushes along the course of a streambed (in August dry), forming strongly shaded coves within, and protected places without (*Delphinium*, *Mertensia* and *Aquilegia* grew here). Vouchers were not made. *A Field Guide to the Rocky Mountain Wildflowers* (Craighead, et al. 1963) was used to identify the species.

## Inventory

## RANUNCULACEAE

1	<i>Aquilegia coerulea</i>	E <sup>1</sup>	R <sup>2</sup>	FT <sup>3</sup>
2	<i>Delphinium occidentale</i>	E	R	FT
3	<i>Thalictrum thalictroides</i>	E	R	FT

## CARYOPHYLLACEAE

4	<i>Arenaria</i> sp.	O	R	FT
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## POLYGONACEAE

5	<i>Eriogonum heracleoides</i>	E	C	FT/FW
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## SALICACEAE

6	<i>Salix subcoerulea</i>	E	A	O
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## BRASSICACEAE

7	<i>Draba</i> sp.	E	R	FT
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## GROSSULARIACEAE

8	<i>Ribes inerme</i>	E	R	FT
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## CRASSULACEAE

9	<i>Sedum stenopetalum</i>	O	C	FW
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## ROSACEAE

10	<i>Potentilla gracilis</i>	E	R	FW
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11	<i>Fragaria</i> sp.	O	C	O
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## FABACEAE

12	<i>Astragalus tegetarius</i>	O	C	FT
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13	<i>Lupinus sericeus</i>	O	A	FW/FT
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14	<i>Trifolium</i> sp.	O	A	O
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## ONAGRACEAE

15	<i>Epilobium angustifolium</i>	O/E	A	FW/FT
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## GERANIACEAE

16	<i>Geranium richardsonii</i>	E	C	FT/FW
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## APIACEAE

17	<i>Perideridia gairdneri</i>	O	C	FW/FT
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18	<i>Heracleum lanatum</i>	E	R	FW
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## BORAGINACEAE

19	<i>Lithospermum incisum</i>	O	R	O
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20	<i>Mertensia ciliata</i>	E	R	FW
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## LAMIACEAE

21	<i>Monarda menthaefolia</i>	O	C	FT
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## SCROPHULARIACEAE

22	<i>Castilleja miniata</i>	E	C	FW
23	<i>Pedicularis bracteosa</i>	O	C	FT

## CAMPANULACEAE

24	<i>Campanula rotundifolia</i>	E	R	FW
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## RUBIACEAE

25	<i>Galium boreale</i>	O	C	FW/FT
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## ASTERACEAE

26	<i>Achillea millefolium</i>	O	C	FW/FT
27	<i>Agoseris aurantiaca</i>	O	C	FW
28	<i>Agoseris glauca</i>	O	C	FW
29	<i>Anaphallis margaritacea</i>	E	C	FW
30	<i>Aster integrifolius</i>	O	A	FW
31	<i>Cirsium vulgare</i>	O	C	FW
32	<i>Chrysopsis villosa</i>	O	C	FW
33	<i>Helianthella uniflora</i>	O	A	FW
34	<i>Erigeron</i> sp.	E	A	FW
35	<i>Lactuca pulchella</i>	O	C	FW
36	<i>Senecio integerrimus</i>	O	C	FW
37	<i>Solidago</i> sp.	O	C	budding
38	<i>Taraxacum officinale</i>	O	C	FW/FT
39	<i>Tragopogon porrifolius</i>	E	R	FW/FT
40	<i>Viguiera</i> sp.	O	A	FW

## LILIACEAE

41	<i>Smilacina stellata</i>	E	R	FT
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<sup>1</sup> O = open area without shade of trees or shrubs; E = edge.

<sup>2</sup> R = rare; C = common; A = abundant.

<sup>3</sup> O = neither fruiting nor flowering; FW = flowering; FT = fruiting. In some plants, the two phases—flowering and fruiting, are coeval. Of *Castilleja*, *Lupinus* and *Epilobium*, this is true. The more dominant phase is given first when both are present.

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## LITERATURE CITED

- Craighead, J.J., F.C. Craighead, Jr. & R.J. Davis. 1963. *A Field Guide to Rocky Mountain Wildflowers*. Houghton Mifflin, Co., Boston.
- Great Plains Flora Association. 1986. *Flora of the Great Plains*. University Press of Kansas, Lawrence.
- Rydberg, P.A. 1922. *Flora of the Rocky Mountains*. New York.